

We've finished the May 1, 2016 Water Supply Index (WSI) and Bulletin 120 (B120) forecasts. The forecasts include observed conditions through the end of April.

The forecasts are posted at:

WSI: <http://cdec.water.ca.gov/cgi-progs/iodir/wsi>

B120: <http://cdec.water.ca.gov/cgi-progs/iodir?s=b120>

Forecast Summary:

The projected median April-July runoff in the major Sierra river basins ranges from 49 percent on the Kern River to 98 percent on the Truckee River. Forecasted median water year runoff in the Sierra ranges from 50 percent on the Kern River to 113 percent on the Trinity River.

Regionally, the April-July forecasts remained the same or dropped when compared to the April 1 forecast. The changes were -5, 0, and -3 percent, respectively in the Sacramento, San Joaquin, and Tulare Lake regions. Despite the presence last Fall of warmer-than-normal tropical sea surface temperatures and the thought by some that they would contribute to a very wet California winter, the April-July forecasts for the three main Sierra regions are below average. The water year forecasts are 102, 91, and 66 percent of average for the Sacramento, San Joaquin, and Tulare Lake regions. Combined, the forecast for the three regions is below average also.

The WSI forecast is based on hydrologic conditions observed through April 2016 and can be summarized as follows:

Sacramento River Unimpaired Runoff Water Year Forecast (SRR) (50 percent exceedance)	18.6 MAF (102 percent of average)
Sacramento Valley Index (SVI) (50 percent exceedance)	7.1 (Below Normal)
San Joaquin Valley Index (SJI) (75 percent exceedance)	2.4 (Dry)

Runoff:

Of the three main regions of the Sierra, only the San Joaquin Region flowed at a rate above average for April (110 percent). The Sacramento and Tulare Lake regions flowed at about 85 percent of average. Fortunately, the water year-to-date flows in the northern two regions are above average (both at 106 percent of average). There is a sharp drop, however, in percent-of-average flows in the Tulare Lake area which is only near 75 percent of average for the Water Year. Within the Tulare Lake Region, the water year-to-date flows vary significantly as shown by the percent of average for the Kings and Kern rivers which are 90 and 52, respectively.

Unimpaired flows for the 2015-2016 water year:

Region	October-April Runoff (%)	April Runoff (%)
Sacramento Valley Index (4 rivers)	106	83
San Joaquin Valley Index (6 rivers)	106	110
Tulare Lake Basin (4 rivers)	76	84

Precipitation:

Following a very wet March in the Northern and Central Sierra Nevada, precipitation accumulated at a below average pace during April for the entire Sierra Nevada.

Precipitation for the 2015-2016 water year accumulated at the following rates of average:

Hydrologic Region	WY accumulated precipitation percent-of-average to date through April 2016	Precipitation for April 2016 percent-of-average
Sacramento River	118	83
San Joaquin River	110	96
Tulare Lake	109	78
Statewide	107	90

Water Year-to-date precipitation is above average for both the Northern Sierra 8-Station Index and the San Joaquin 5-Station Index, but slightly below average for the Tulare Basin 6-Station Index.

Precipitation Index	WY accumulated precipitation percent-of-average (inches) to date through April 2016	Precipitation for April 2016 percent-of-average (inches)
Northern Sierra 8-Station Index	120 (54.7 inches)	72 (2.8 inches)
San Joaquin 5-Station Index	104 (38.7 inches)	78 (2.8 inches)
Tulare Basin 6-Station Index	94 (25.2 inches)	61 (1.6 inches)

Snowpack:

Snow accumulated at a below-average pace during the month of April. Statewide, April was an anomalously warm month with minimum temperatures in the warmest top 10 percent of the historical distribution and were the seventh warmest in the Sierra Nevada historical record. The warm minimum temperatures in April drove up the regional average temperatures into the top 10 percent as well. Although maximum temperatures were closer to average, the warmer minimum and daily temperatures certainly had their impact on the Sierra Nevada snow pack. Despite a few late April snow showers, snow water content declined in April.

The results of the May 2016 statewide snow surveys are as follows:

Region	No. Courses Measured	Avg WC	% Average May 1
North Coast	9	15.1	57
Sacramento	67	14.6	52
San Joaquin Valley	56	18.6	60
Tulare Lake	34	11.8	51
North Lahontan	5	11.0	50
South Lahontan	4	9.0	53
Statewide Average (weighted)			55

On May 1, the automated snow sensor network showed similar numbers to the snow courses; albeit slightly higher for the Northern and Central regions than the snow survey results. In general, the snowpack lost water content according to the sensors in all regions since April 1.

The snowpack as of the morning of May 1, 2016 stands at the following (based on snow sensors):

Region	Snow Water Equivalent (inches)	% of Average (May 1)
Northern	12.8	63
Central	15.9	68
Southern	9.7	46
Statewide	13.2	61

Weather and Climate Outlooks:

The 6-day weather forecast calls for dry, warm weather for all of California. Freezing elevations in the Sierra will generally stay above 10,000 ft. elevation during this period.

The NWS Climate Prediction Center (CPC) one-month outlook for May, issued April 30, indicates increased chances of above normal temperatures for Northern California and near normal temperatures elsewhere in the state. The same forecast calls for above normal precipitation for all of the state except for the California coastline north of San Francisco Bay where near normal precipitation is expected.

The CPC three-month (May-June-July) outlook, last issued on April 21, indicates increased chances of above normal temperatures statewide. The same forecast calls for increased chances of above normal precipitation statewide except for the Southern California coastline from Santa Barbara southward, as well as the Inland Empire region of Southern California where equal chances of above or below normal precipitation are expected.

The CPC's El Niño-Southern Oscillation Index outlook was updated on May 9. It indicates that El Niño conditions (positive 0.8 degrees Celsius in Niño region 3.4) are present but weakening. Positive equatorial sea surface temperature (SST) anomalies continue across most of the Pacific Ocean. A transition to ENSO-neutral is likely during late Northern Hemisphere spring or early summer 2016, with an increasing chance for La Niña conditions during the second half of the year.

Next Update:

This is the last update of the Water Supply Index forecast for the 2015-16 Water Year. A Bulletin 120 update for conditions as of May 10 will be available, Thursday, May 12. If you have any questions regarding this forecast, please contact a member of the Snow Surveys staff.